

(19) World Intellectual Property Organization  
International Bureau



PCT



(43) International Publication Date  
20 October 2005 (20.10.2005)

(10) International Publication Number  
**WO 2005/097667 A3**

(51) International Patent Classification:

**B01L 3/00** (2006.01) **B01L 11/00** (2006.01)  
**B01L 9/00** (2006.01)

(21) International Application Number:

PCT/US2005/011025

(22) International Filing Date: 1 April 2005 (01.04.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/559,383 2 April 2004 (02.04.2004) US

(71) Applicant (for all designated States except US): **EKSI-  
GENT TECHNOLOGIES LLC** [US/US]; 2021 Las Posi-  
tas Court, Suite 161, Livermore, CA 94550 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **ARNOLD, Don, W.**  
[US/US]; 1746 Old Tower Road, Livermore, CA 94550  
(US).

(74) Agents: **SHELDON, Jeffrey, G.** et al.; Sheldon & Mak,  
225 South Lake Avenue, Suite 900, Pasadena, CA 91101  
(US).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,

KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY,  
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU,  
ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,  
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,  
GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))
- of inventorship (Rule 4.17(iv))

Published:

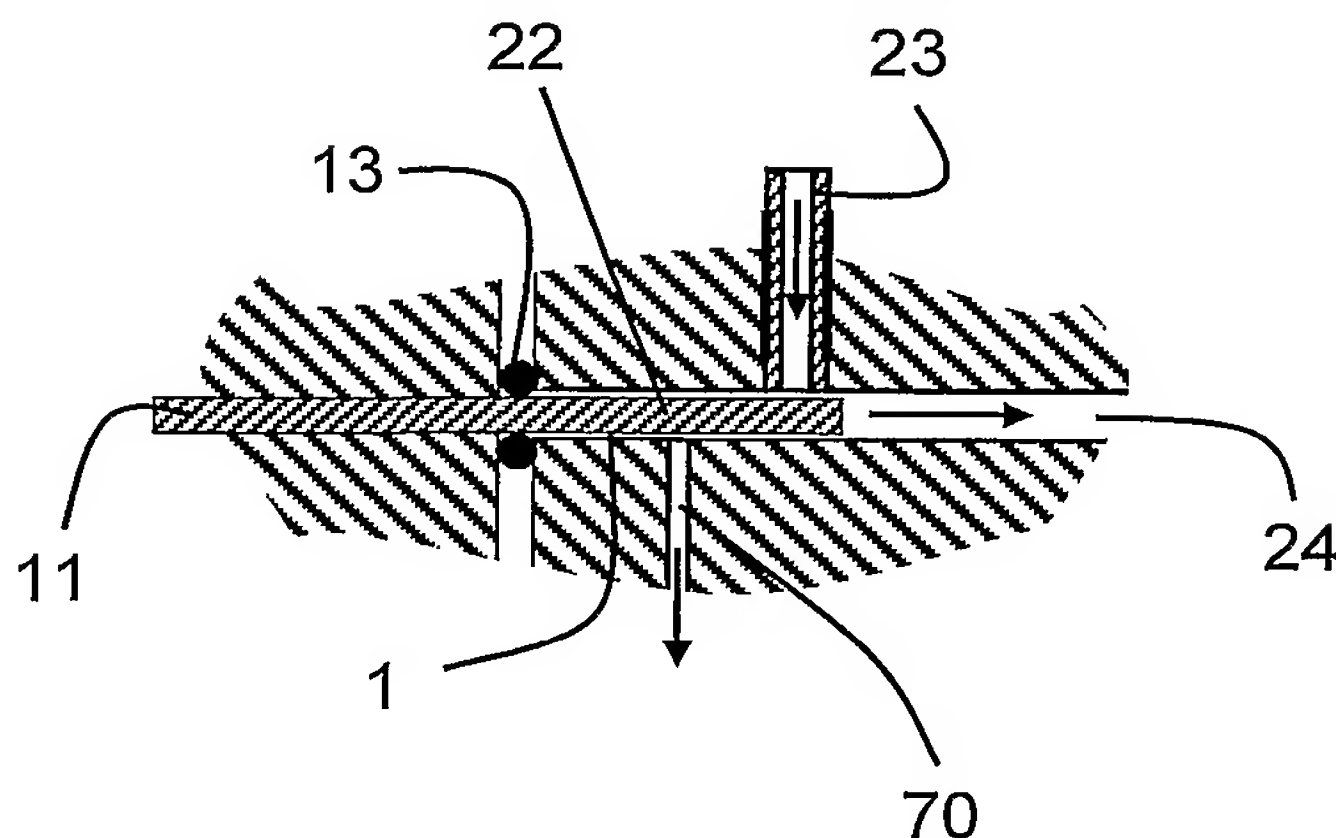
- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:

13 July 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MICROFLUIDIC DEVICE



(57) Abstract: Microfluidic systems including a principal microfluidic conduit (24), an adjacent dead volume (1) and a drain conduit (70) which mitigates the adverse effects of the dead volume on the operation of the system.